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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,088	09/26/2003	Michael A. Wasserman	5681-59600	7566

7590

12/08/2005

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EXAMINER

TUNG, KEE M

ART UNIT PAPER NUMBER

2671

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,088

Applicant(s)

WASSERMAN ET AL.

Examiner

Kee M. Tung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-38 of copending Application No. 10/673,087. Although the conflicting claims are not identical, they are not patentably distinct from each other because they seem to use different terminology for means to perform the same functions, for example, in the copending application, sample manager is claimed and the present application, convolve unit is claimed. As discussed in the specification, a sample manager includes at least a convolve units (page 7 of the specification). Therefore, It would have been obvious to one of ordinary skill in the art at the time the present invention was made that video

convolve unit of the present claims would have been obvious by the teachings of sample manager of copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "interface" (claims 3 and 18) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 3 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original filed specification fails to describe the claimed "interface" (claim 3 and 18) at the time the present application was filed.

6. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 25, the words "may be" is indefinite for failing to particularly point out and distinctly claim the subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5, 7-14, 18, 19 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (5,129,092) in view of Deering et al (6,417,861 hereinafter "Deering").

Wilson teaches a system for distributed convolution of stacked digital video data (Fig. 1) comprising a plurality of video data convolve units (processor units 10a-10h) connected in a chain (by buses 11a-11p and 21a-21p), wherein a video data convolve unit is operable to receive video pixel data from a data input device (20) or host computer (25); calculate partial convolution sums for a set of video pixels that are located within a convolution kernel (Wilson teaches to process image in 8 x 8 bit submatrices and the resultant element is passed down the processor line to be operated upon, which provides a sum of weighted values for that portion of samples, abstract and col. 2, line 45 to col. 3, line 4; and the system is intended to handle convolutions and/or sums as part of processing images, col. 18, lines 20-60); receive accumulated partial convolution sums from prior video data convolve unit in the chain, unless the video data convolve unit is the first video data convolve unit in the chain (such as, processor unit 10b received partial sums from processor unit 10a); add the calculated partial convolution sums to the previously accumulated partial convolution sums (Wilson teaches for accumulator model, each processor unit passes the partial sums along towards the right); and output new accumulated partial convolution sums to the next video data convolve unit in the chain, unless the unit is the last unit in the chain (Wilson teaches to output the results to the next processor unit in the series). However, Wilson fails to explicitly teach or suggest the data input device 20 is a rendering unit.

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This is what Deering teaches. Deering teaches video data convolve units (170A – 170D) receive pixel data from rendering units (Fig. 3, rendering unit 150A-150D). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of Deering and Wilson because the system of Deering provides real time filter process and may use a number of different filter types and thus provides better flexibility to the system as taught by Deering (abstract). Therefore, at least claims 1 and 4 would have been obvious.

As per claim 2, Wilson teaches one or more partial results buses, wherein each bus connects a video data convolve unit in the chain to a next video data convolve unit in the chain (Fig. 1, buses 11a and 21a).

As per claim 3, the combined system fails to teach an interface. However, the interface would have been obvious to one of ordinary skill in the art at the time the present invention was made to implement the teachings of Deering in order to provide efficient data transfer between the devices.

As per claim 5, Wilson teaches a video line buffer (13a) utilized to store lines of video pixels received from the video output of the rendering unit.

Claims 7 and 8 are similar in scope to claims 1 and 2, and thus are rejected under similar rationale.

As per claims 9 and 13, Deering teaches a video blend unit that is operable to ... (col. 32, lines 15-27).

Claims 10-12 are similar in scope to claims 1 and 2, and thus are rejected under similar rationale.

Claim 14 is similar in scope to claim 1, and thus is rejected under similar rationale.

Claims 18 and 19 are similar in scope to claims 3 and 4, and thus are rejected under similar rationale.

As per claim 21, Deering teaches each graphics rendering unit renders video pixels for primitives located anywhere in screen space (150A-150D).

Claim 22 is similar in scope to claim 1, and thus is rejected under similar rationale.

As per claim 23, Wilson teaches a last video data convolve unit (10h) in the chain outputs the combined and ordered convolved video pixels to a display (22).

As per claim 24, Deering teaches each rendering units renders video pixels for a different portion of screen space (150).

As per claim 25, Deering teaches frustum culling may be utilized to soft the geometric primitives by screen portions ... (col. 32, lines 15-27).

Allowable Subject Matter

9. Claims 6, 15-17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art made of record fails to anticipate or make obvious the claimed invention. Specifically, the prior art fails to teach or suggest, in combination with the

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remaining elements and/or steps, the video data convolve unit further comprises a convolution calculation unit ..., a partial results accumulator ...and a pixel value calculator ... as recited in claim 6; specifying a different jitter value or jitter pattern and rendering pixel values for each jittered pixel ... as recited in claim 15; for the last video data convolve unit in the chain; determining parameter values ... as recited in claim 16; and the pixel data from each rendering unit are determined for primitives that are geometrically expanded in both x and y dimensions by ... as recited in claim 20.


Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kee M. Tung whose telephone number is 571-272-7794. The examiner can normally be reached on Tuesday - Friday from 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kee M Tung
Primary Examiner
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